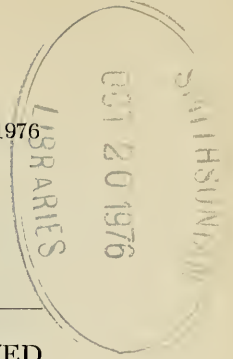


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PROCEEDINGS  
OF THE  
BIOLOGICAL SOCIETY OF WASHINGTONCOMMENTS ON GENERIC NAMES OF FOUR-EYED  
OPOSSUMS (FAMILY DIDELPHIDAE)

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The name *Philander* Tiedemann, 1808, currently applied to the pouched four-eyed opossums belongs, according to Pine (1973), to the pouchless four-eyed opossums universally known by the name *Metachirus* Burmeister, 1856. The correct name for the pouched form, Pine affirms, is *Metachirops* Matschie, 1916, currently treated as a junior synonym of *Philander* Tiedemann.

As understood by Pine (1973, p. 391 ff.), pouched four-eyed opossums are grayish or blackish on upper parts of body with "considerable extension of fur onto the base of the tail." The pouchless forms, seen by the same authority, are reddish brown dorsally with "little extension of fur onto the base of the tail." Whatever the characters, resolution of the problem of the correct generic name for each group of four-eyed opossums depends on the definition of its type species.

It is generally agreed that the first valid name for a species of pouched four-eyed opossum is *Didelphis opossum* Linnaeus 1758. Sole basis for the name is an adult male and female described and figured by the Dutch naturalist collector, Albert Seba (1734, p. 56, pl. 36, fig. 1 [male], fig. 2 [female]). The male, according to Seba, is dark chestnut on upper parts of body, its tail base furred for the length of a human finger, roughly 7-9 cm. External characters of the female, figured with 3 young protruding from her pouch, are undescribed except for the pouch.

It is clear that Linnaeus (1758, p. 55) based the name



FIG. 1. Male and female pouched four-eyed opossums reproduced from Seba (1734, pl. 36) and rearranged. Upper figure, adult male, labelled "Num. 1. *Philander, Opassum, sive Carigueja, Brasiliensis; mas.*" Lower figure, adult female with pouch young, labelled "Num.

*Didelphis opossum* no less on the female than the male. His diagnosis and description of the species, "*D[idelphis] cauda semipilosa, superciliorum regione pallidiore, mammis binis,*" and "*abdomen circa mammas contrahitur in marsupium; pollicis postici mutici,*" leave no doubt on that point. Color is not mentioned but the phrase "*cauda semipilosa*" can be translated either as hairy for half its length or as partially furred. Whatever the wording used by Linnaeus, the interpretation derives solely from Seba's figures of the animals (Fig. 1).

Although nothing in the original description of *Didelphis opossum* Linnaeus suggests anything other than the well-known pouched four-eyed opossum, Pine (1973, p. 394) accedes for "reasons of nomenclatural stability" but only if the color of the animal is regarded as grayish. In Pine's mind the "combination of characters [brown dorsal surface, extensively furred tail base, and pouch] as described and figured by Seba fit no known opossums and the identity of his material will almost certainly remain unknown (assuming it does not represent an unrecognized species)."

There is no such ambiguity. Seba's "*Philander, Opassum, sive Carigueja, Brasiliensis; mas.*" and "*Philander, Americanus, seu Carigueja, cum catulis, saccum ventris intrantibus; fœmina,*" are universally known and recognized as *Didelphis opossum* Linnaeus. They cannot be anything else. To eliminate a possible source of contention, the female is here designated lectotype.

Pine's belief that the pouched four-eyed opossum, *Didelphis opossum* Linnaeus, is invariably grayish and the pouchless four-eyed species, *Didelphis nudicaudatus* E. Geoffroy, is invariably brownish, discounts the considerable amount of individual and geographic variation natural to both species. The type locality of *Didelphis opossum* had been restricted

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2. *Philander, Americanus, seu Carigueja, cum catulis, saccum ventris intrantibus; fœmina.*" Vertical line across upper figure is center fold of double page display; scale added to indicate size of figures on original plate.



by J. A. Allen (1900, p. 195) to Suriname, formerly Dutch Guiana, where most of Seba's South American or "Brazilian" animals originated, and was further restricted to Paramaribo, by Matschie (1916, pp. 266, 268). Among representatives of *D. opossum* preserved in the Field Museum, those collected by me in Suriname are buffy like most *D. nudicaudata*. Other specimens, notably of *Philander opossum melanurus* Thomas from western Ecuador, and many of *P. o. fuscogriseus* J. A. Allen, to use the current names, can be described as "dark brown." In contrast, *Metachirus nudicaudatus modestus* Thomas, southernmost race of the pouchless species, is characterized as "grey." Indeed, Thomas (1901, p. 545) left no grounds for differentiation between the species on gross color when he described *Metachirus nudicaudatus phaeus* as being the "usual buffy grey brown."

The only consistent anatomical character of taxonomic value mentioned in 18th and early 19th century descriptions of four-eyed opossums is the presence or absence of a pouch in the female. The densely pilose basal portion of the tail, never precisely quantified in early descriptions or by Pine, ranges in Field Museum material from 2-4 cm in the pouchless species (40 samples with m4 fully erupted), and from 3-8 cm in the pouched forms (48 samples with m4 fully erupted). The overlap is 67% in the first species, 33% in the second. Color of upper parts is variable and its description in published accounts is subjective. Furthermore, old types of four-eyed opossums mounted and exhibited in natural light, were often faded when described, and those long preserved in spirits, usually rum or brandy, are stained brown. Nothing is said of the manner of preservation of Seba's philanders but the artist's rendition suggests they were spirit preserved. Linnaeus wisely refrained from mentioning general body color in his diagnosis of *Didelphis opossum* and none is needed for defining the species.

In 1949 I showed that the original description of *Philander* Tiedemann, includes 3 nominal species. Tiedemann's diagnosis of the first, "Das Virginische Opossum. *P. virginianus* (Did. opossum L[innaeus]) (le sarigue Buff[on] T. X. p. 279). Körper röthlich braun. Ueber jedem Auge ein gelblich weiser

Flecken. Schwanz so lang als der Leib. 1 Fuss und 3 Zoll lang ohne den Schwanz. In Virginien, Mexico, Peru u. s. w.," is of a four-eyed opossum. Color pattern, measurements, and the equation of *P. virginianus* with the Linnaean *Didelphis opossum* and the sarigue of Buffon, actually Daubenton in Buffon (1763, p. 311, pl. 45 [male], pl. 46 [female]) unequivocally identifies it with the pouched species. Tiedemann's vague notions of geographic distribution and the misleading toponym he substituted for the earlier *Didelphis opossum* do not alter the taxonomic status of the species. The remaining forms included by Tiedemann in his *Philander* are "*P. murinus* (Did. murina L.)," a *Marmosa*, and "*P. brachyurus* (Did. brachyuros Penn.)," a *Mono-delphis*.

My (1949, p. 12) designation of "*P[hilander] virginianus* Tiedemann = *Didelphis opossum* Linnaeus" as type of *Philander* Tiedemann 1808, conforms to stipulations of Article 69 (a) of the International Code of Zoological Nomenclature (1961). In this case, however, the formal designation of a type is superfluous. The generic name *Philander* Tiedemann derives from the primary vernacular name, "*Philander, Opas-sum* [sic], *sive Carigueja*," used by Seba (1734) for the animals and cited by Linnaeus in his description of *Didelphis opossum*. Hence, *P[hilander] virginianus* (Did. *opossum*, L.) is *ipso facto* type by Linnaean tautonomy (Herskovitz, 1949, p. 11; Int. Code Zool. Nomencl., 1961, Art. 68 (d) (i).

Pine (1973, p. 398) queries my 1949 interpretation of the rules of nomenclature but no other is valid. On the other hand, Pine's opinion that the real type of *Philander* Tiedemann 1801, is the animal "presently known as *Metachirus nudicaudatus*," lacks merit. This species is not mentioned by any name or in any guise in the original description of the genus *Philander* and likely was unknown to Tiedemann. It cannot be the type of *Philander* Tiedemann under any published and accepted rules of zoological nomenclature.

*Metachirops* Matschie, 1916, a junior synonym of *Philander* Tiedemann, was established to contain 9 didelphid species. Pine (1973, p. 398) states that "*D[idelphis] quica* was the only species mentioned on the occasion of the first proposal

of the name [*Metachirops*]." Pine also declares he is "unable to find a formal proposal of a species to be regarded as the type-species of *Metachirops*." If only one species were originally included in the genus, as Pine believes, that species is type by monotypy (Art. 68 [c]) and no proposal is necessary. In the present case Matschie (1916, p. 268) listed 9 species by name and formally designated "[*Metachirops*] *quica* Temminck... Typus" (= "type by original designation," Art. 68 (a) Int. Code Zool. Nomencl., 1961). Compilers and cataloguers (e.g., G. M. Miller, 1923, p. 7; Hall and Kelson, 1959, p. 10) routinely cite *Didelphis quica* Temminck as type but Pine (1973, p. 399) thinks his proclamation of the type species is the first and only valid designation.

The genus *Metachirus* was erected by Burmeister (1854, pp. viii, 135) to contain 4 species (Pine, 1973, p. 397, counted only 2). These are (1) "*Didelphys myosurus*" attributed to Temminck, (2) "*Didelphys quica* Natt[er]," the manuscript name adopted by Temminck for his description of *Didelphis quica*, a pouched four-eyed opossum now type of *Metachirops* Matschie, (3) "*Didelphys cinerea* Temminck," currently *Marmosa cinerea*, and (4) "*Didelphys incana* Lund," now *Marmosa incana* Lund.

Burmeister's diagnosis of *Metachirus* and his concept of "*Didelphys myosurus*" agree with what was known of the pouchless *Didelphis nudicaudatus* E. Geoffroy. Burmeister had seen no specimens of "*myosurus*" but he followed Wied-Neuwied (1826, p. 400, pl. 2, fig. 5 [skull]) who described two male *D. nudicaudatus* from Comechatibá, Bahia, Brazil, under the name *D. myosuros*. Burmeister's use of the emendation *myosurus* with *D. nudicaudata* cited as a senior synonym follows Wagner (1843, p. 43).

In 1856, Burmeister (p. 67) reviewed *Metachirus* and noted the presence of a fully developed pouch in females. The three species admitted in the revised genus are *Metachirus opossum* Linnaeus, "*M. myosurus* Temminck" with *Didelphys nudicaudata* E. Geoffroy cited as a senior synonym, and *M. quica* Temminck. His description and colored figure of *Metachirus myosurus* are those of a pouchless four-eyed opossum.

A type species of the genus was not designated in either the revised or original description of *Metachirus*.

The name *Metachirus* fell into disuse until resurrected by Thomas (1888, p. 329) as a subgenus of *Didelphys* (= *Didelphys* Linnaeus, emended), with *D. nudicaudata* E. Geoffroy designated type. This action conforms to Article 69 (a) of the International Code of Zoological Nomenclature: "If an author [Burmeister] established a nominal genus [*Metachirus*] but did not designate or indicate its type-species, any zoologist [Thomas, 1888] may subsequently designate as the type-species one of the originally included nominal species." As explained in Article 69 (a) (i), "the 'originally included species' comprise only those actually cited by name in the nominal genus, either as valid names (including subspecies, varieties, and forms), as synonyms [*D. nudicaudatus* = '*Didelphys myosurus*' Burmeister, not *Didelphys myosuros* Temminck] or as stated misidentifications of previously established species."

The status of *Didelphys myosuros* Temminck (not Burmeister) needs clarification. Temminck (1825) based the name on an unspecified number of four-eyed opossums the females of which "ont une poche complete." Temminck (1825, p. 39) rejected the idea that his myosure might be conspecific with the pouchless *Didelphys nudicaudatus* E. Geoffroy by pointing out that "il est dit dans le texte que le queue de cet animal est toute nue, et le femelle n'a point de poche." At the same time, Temminck drew attention to a poorly preserved skin of a young female in the Paris Museum labelled *Didelphys nudicaudatus* with seemingly all the characters of *D. myosuros* but he questioned whether that specimen might be the actual type of *D. nudicaudatus* E. Geoffroy.

Temminck (1825, p. 40) also examined specimens of *D. myosuros* in the museums of Leiden, Vienna, Frankfurt and Prince Maximilian Wied-Neuwied. There is no evidence, however, that the two males of *D. nudicaudatus* collected in Comechatibá (= Comoxatibá) and recorded in 1826 by Wied-Neuwied as *D. myosuros*, were among those seen by Temminck. In any event, all authors beginning with Wied-



Neuwied (1826) and Desmarest (1827) assumed that Temminck himself had identified his *D. myosuroides* with *D. nudicaudata*. In 1959 (p. 343) I pointed out that the name *Didelphis myosuroides* Temminck is based on pouched four-eyed opossums. I erred, however, in treating the Comoxatibá opossums as syntypes and my designation of one of them as lectotype is invalid (cf. Art. 73, International Code of Zoological Nomenclature, 1961).

A taxonomic review of *Philander* and *Metachirus* is in preparation for publication elsewhere. The foregoing shows that the generic names of the similar appearing but unrelated four-eyed opossums are the following:

*Philander* Tiedemann 1808—type, *Philander virginianus* Tiedemann = *Didelphis opossum* Linnaeus (type by Linnaean tautonomy [cf. Hershkovitz, 1949, p. 12, and above]); pouched four-eyed opossums.

*Metachirus* Burmeister, 1854—type, *Didelphis nudicaudatus* E. Geoffroy (subsequent designation by Thomas, 1888, p. 329); pouchless four-eyed opossums.

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